Listing of Claims:

1. (Previously Presented) A method for communicating with a large number of remote satellite locations comprising simultaneously in random access mode communicating with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping time slot within one of a plurality of channels.

2. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 1, wherein when one of said plurality of second remote terminal devices wants access to an inbound time slot within a channel of one of said large number of remote satellite locations, said one of said a plurality of second remote terminal devices contends for an inbound time slot within a channel, and if a collision occurs with another of said plurality of second remote terminal devices or plurality of first remote terminal devices, transmission from said one of said plurality of second remote terminal devices is repeated at one of random/pseudo random times, using random/pseudo random inbound resources, and random/pseudo random times using random/pseudo random inbound resources, until said one of said plurality of second remote terminal devices captures an inbound time slot within a channel.

3. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 2, wherein said one of said plurality of second remote terminal devices determines if there is a high likelihood that a moderate to long transmission is being initiated, and when such a determination is made said one of said

plurality of second remote terminal devices requests allocation of an assigned inbound time slot within a channel.

4. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 2, wherein if said one of said plurality of second remote terminal devices determines that said one of said plurality of second remote terminal devices has been active for a predetermined period of time, said one of said plurality of second remote terminal devices directly accesses said inbound time slot within a channel.

5. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 2, wherein said one of said plurality of second remote terminal devices determines that said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses saidtime slots.

6. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 2, wherein when an inbound one of said time slots has been allocated to said one of said plurality of second remote terminal devices, said one of said plurality of second remote terminal devices can no longer randomize its inbound transmissions and transmits on a predetermined portion of said inbound channel whenever said one of said plurality of second remote terminal devices has inbound data to transmit.

7. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 2, wherein inactive ones of said plurality of

second remote terminal devices are configured to randomize their transmissions over said time slots.

8. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 1, wherein a hub site determines threshold criteria for determining when said remote terminal devices are active, and allocates said time slots.

9. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 8, wherein said hub site gathers traffic statistics from said remote terminal devices, identifies active ones of said remote terminal devices using said traffic statistics, and allocates inbound ones of said time slots to said active remote terminal devices, and informs said plurality of first remote terminal devices and said plurality of second remote terminal devices of said allocation.

10. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 3, wherein said one of said plurality of second remote terminal devices informs said plurality of first remote terminal devices and said plurality of second remote terminal devices of said allocation.

11. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 8, wherein each of said plurality of second remote terminal devices monitors their transmissions and notifies said hub site when it becomes active and is likely to have a medium to long transmission.

12. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 11, wherein said hub site allocates a portion of inbound ones of said channels to a newly active one of said plurality of second remote terminal devices.

13. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 1, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic.

14. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 13, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot.

15. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 14, wherein said mini-slot is a time slot every third frame.

16. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 14, wherein said mini-slot is a time slot at an intermittent frequency.

17. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 14, wherein said mini-slot is a time slot every third frame and at an intermittent frequency.

18. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 14, wherein inbound one of said channels are allocated first to voice traffic followed by data traffic.

19. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 8, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory.

20. (Previously Presented) A method for communicating with a large number of remote satellite locations comprising simultaneously in random access mode communicating with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels wherein a hub site determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory, and wherein said hub site correlates said loads for each of said first and second remote terminal devices with a last time slot in which a burst was last received from each of said first and second remote terminal devices, and maintains said correlated loads in an allocation table.

21. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 20, wherein said hub site transmits changes to said allocation table to said first and second remote terminal devices.

22. (Previously Presented) A method for communicating with a large number of remote satellite locations as recited in claim 20, wherein said hub site updates said allocation table every inbound frame.

23. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 8, wherein said hub site maintains a number of said channels and frequencies of all of said channels said first and second remote terminal devices can transmit on in memory.

24. (Previously Presented) A method for communicating with a large number of remote satellite locations comprising simultaneously in random access mode communicating with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot, and wherein said first and second remote terminal devices have a multi-slot counter, said mini-slot counter in each of said first and second remote terminal devices

being synchronized with said hub site and each of said first and second remote terminal devices.

25. (Previously Presented) A method for communicating with a large number of remote satellite locations comprising simultaneously in random access mode communicating with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels wherein a hub site determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory, and wherein said load for each of said first and second remote terminal device (L_{new}) is calculated according to the following formula:

$$L_{new} = L_{old}(1-\tau)^n + \tau,$$

where τ is a configurable constant, n is the number of time-slots since a last time-slot on which a packet was received from a remote terminal device, and L_{old} is the previous load value of the remote terminal device.

26. (Previously Presented) A method for communicating with a large number of remote satellite locations comprising simultaneously in random access mode communicating with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels wherein a hub site determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels,

wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory, and wherein said load (L_{new}) for each of said first and second remote terminal device is calculated according to the following formula:

$$L_{new} = L_{old} * M * (1 - 1/N)^n + M/N$$

where M is a normalizing constant M, N is a time constant, which is the number of time-slots in T seconds (where T is a configuration parameter), τ is 1/N, n is the number of time-slots since a last time-slot on which a packet was received from a remote terminal device, and L_{old} is the previous load value of the remote terminal device.

27. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 20, wherein said allocation table comprises information relating to a number of frequencies a remote terminal device is capable of utilizing, a number of mini-slots said remote terminal device may receive, a total number and identification of free inbound ones of said channels and mini-slots, a minimum and assigned maximum load value allocated to each of said first and second remote terminal device, current inbound resources allocated to each of said plurality of first and second remote terminal devices, whether said remote terminal device may become an active site, and whether said remote terminal device has any weighting factors associated with its load calculations.

28. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 20, wherein said allocation table comprises a list of all remote sites from which a packet was received during a last measure increment.

29. (Original) A method for communicating with a large number of remote satellite locations as recited in claim 28, wherein said measure increment is one of a multi-slot time period and window.

30. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices operating in random access mode;

a plurality of second remote terminal devices operating in a dedicated access mode; and

a hub site which determines threshold criteria for determining when said remote terminal devices are active, and allocates an overlapping time slot from a plurality of time slots in a plurality of plurality of channels to at least one terminal device from the first set of remote terminal devices and at least one terminal device from the plurality of second remote terminal devices.

31. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 30, wherein when one of said plurality of second remote terminal devices determines that there is a high likelihood that a moderate to long transmission is being initiated, a request for allocation of an assigned inbound time slot is made.

32. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 30, wherein when one of said plurality of

second remote terminal devices has been active for a predetermined period of time, said one of said plurality of second remote terminal devices directly accesses an inbound one of a plurality of the time slots.

33. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 30, wherein when said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses said time slot.

34. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 30, wherein when one of said inbound time slots has been allocated to said one of said plurality of second remote terminal devices, said one of said plurality of second remote terminal devices transmits on a predetermined portion of said inbound channel.

35. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 30, wherein inactive ones of said plurality of second remote terminal devices are configured to randomize their transmissions over said time slots on said one or more channels.

36. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 35, wherein said hub site gathers traffic statistics from said first and second remote terminal devices, identifies active ones of said remote terminal devices using said traffic statistics, allocates inbound ones of said time

slots to said active remote terminal devices, and informs said plurality of first and second remote terminal devices of said allocation.

37. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 33, wherein each of said plurality of second remote terminal devices monitors their transmissions and notifies said hub site when it becomes active and is likely to have a medium to long transmission.

38. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 33, wherein said hub site allocates a portion of inbound ones of said channels to a newly active one of said plurality of second remote terminal devices.

39. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 33, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating a frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic.

40. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 39, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot.

41. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 40, wherein said mini-slot is a time slot every third frame.

42. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 40, wherein said mini-slot is a time slot at an intermittent frequency.

43. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 40, wherein said mini-slot is a time slot every third frame and at an intermittent frequency.

44. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 40, wherein inbound one of said channels are allocated first to voice traffic followed by data traffic.

45. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 40, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory.

46. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices;

a plurality of second remote terminal devices operating in a dedicated mode using the same overlapping channels; and

a hub site which determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein when said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses said channels, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory, and wherein said hub site correlates said loads for each of said first and second remote terminal devices with a last time slot in which a burst was last received from each of said first and second remote terminal devices, and maintains said correlated loads in an allocation table.

47. (Previously Presented) A system for communicating with a large number of remote satellite locations as recited in claim 46, wherein said hub site transmits changes to said allocation table to said first and second remote terminal devices.

48. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 46, wherein said hub site updates said allocation table every inbound frame.

49. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 33, wherein said hub site comprises a memory in which a number of said channels and frequencies of all of said channels said first and second remote terminal devices can transmit on is maintained.

50. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices;

a plurality of second remote terminal devices operating in a dedicated mode using the same overlapping channels; and

a hub site which determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein when said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses said channels, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each

of said first and second remote terminal device is allocated a mini-slot, and wherein said first and second remote terminal devices comprise a multi-slot counter, said mini-slot counter in each of said first and second remote terminal devices being synchronized with said hub site and each of said first and second remote terminal devices.

51. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices;

a plurality of second remote terminal devices operating in a dedicated mode using the same overlapping channels; and

a hub site which determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein when said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses said channels, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains said loads in memory, and wherein said load (L_{new}) for each of said first and second remote terminal device is calculated according to the following formula:

$$L_{new} = L_{old}(1-\tau)^n + \tau ,$$

where τ is a configurable constant, n is the number of time-slots since a last time-slot on which a packet was received from a remote terminal device, and L_{old} is the previous load value of the remote terminal device.

52. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices;

a plurality of second remote terminal devices operating in a dedicated mode using the same overlapping channels; and

a hub site which determines threshold criteria for determining when said remote terminal devices are active, and allocates said channels, wherein when said one of said plurality of second remote terminal devices has been sufficiently active during a sliding window, said one of said plurality of second remote terminal devices directly accesses said channels, wherein collisions between inbound packets from different ones of said first and second remote terminal devices are prevented by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic, wherein when there are more active ones of said first and second remote terminal devices than there are channels, each of said first and second remote terminal device is allocated a mini-slot, wherein said hub site calculates a load for each of said first and second remote terminal devices and retains

said loads in memory, and wherein said load (L_{new}) for each of said first and second remote terminal device is calculated according to the following formula:

$$L_{new} = L_{old} * M * (1 - 1/N)^n + M/N$$

where M is a normalizing constant M, N is a time constant, which is the number of time-slots in T seconds (where T is a configuration parameter), τ is 1/N, n is the number of time-slots since a last time-slot on which a packet was received from a remote terminal device, and L_{old} is the previous load value of the remote terminal device.

53. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 46, wherein said allocation table comprises information relating to a number of frequencies a remote terminal device is capable of utilizing, a number of mini-slots said remote terminal device may receive, a total number and identification of free inbound ones of said channels and mini-slots, a minimum and assigned maximum load value allocated to each of said first and second remote terminal device, current inbound resources allocated to each of said plurality of first and second remote terminal devices, whether said remote terminal device may become an active site, and whether said remote terminal device has any weighting factors associated with its load calculations.

54. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 46, wherein said allocation table comprises a list of all remote sites from which a packet was received during a last measure increment.

55. (Original) A system for communicating with a large number of remote satellite locations as recited in claim 54, wherein said measure increment is one of a multi-slot time period and window.

56. (Previously Presented) A system for communicating with a large number of remote satellite locations comprising:

a plurality of a first set of remote terminal devices operating in random access mode using a first time slot within a plurality of channels; and

a plurality of second remote terminal devices operating in a dedicated access mode using the same first time slot within the plurality of channels.

57. (Previously Presented) A method for communicating with a plurality of VSAT terminals comprising simultaneously using a time slot within a channel for both dedicated access mode and random access mode.

58. (Previously Presented) A method for communicating with a plurality of VSAT terminals comprising intentionally allowing collisions between packets sent in dedicated access mode and random access mode.

59. (Previously Presented) A method comprising using the same channel to simultaneously send data in random access mode and dedicated access mode where the data in both modes may occur in the same time-slot and collide.